Coffeyville Journal — Progress Edition — Feb. 1952

Lithopone Plant At Ozark Unique

The Coffeyville installation of the Ozark Smelting and Mining Co. is one of the most modern lithopone plants in the United States. The principal reason for buildng this plant in Coffeyville was due to the large amount of zinc sulphate that is used in the manufacture of lithopone, also the availability of barytes ore and natural gas for fuel purposes.

The output of the plant is around 28,000 tons per year.

The product is shipped to practically every state in the union and large tonnages are exported to foreign countries.

This product, besides being used as a paint pigment, is used by the rubber industry, and other manufacturers.

The three plants cover approximately 53 acres of ground and in full operation will handle approximately 200,000 tons of raw materi' each year. The plant was completely mechanized in 1945 and all of the latest equipment for the handling of material was installed. This consists of front end loaders, fork trucks, crane, shovel, and trucks for hauling the material.

Opened in 1960

This plant has been in continuous operation since 1906, with the exception of two periods of about 90 days each when the plant was down. There are 400 to 425 employees when the plant is in full operation.

Charles E. Deeds is superintendent of the plant.

The forerunner of the Coffeyville leaded zinc oxide plant was first constructed and put in operation at West Plains, Mo. It was later acquired by the Sherwin-Williams Co. and moved to Joplin, Mo. In March of 1905, it was decided to move the plant to Coffeyville. The principal reason for this move was the cheap industrial gas that was available at that time. Large quantities of fuel gas are used for various purposes in the manufacture of paint pigments.

Construction work on the smelter was started in October of 1905, and the first smelter unit was completed and in operation in March of 1906. Immediately after the starting of the smelter, it was decided to double the capacity. This work was completed and there were numerous additions to the oxide smelter up until 1926.

Not Truly Smelter

The smelter, as it is generally called, is not truly a smelter, but a plant for the reduction of lead and zinc ores into a co-fumed paint pigment. Lead and zinc ores are used in large quantities, and these ores combined with anthracite coal and flint chat make up the furnace charges. The furnace charges are laboratory controlled so that a certain percent of lead, zinc, coal and inerts are included in each charge to give good color and correct analysis to the leaded zinc oxide as a finished product. Anthracite coal is used as a reduction agent as it contains a high carbon content and is low in volatile matter so that it does not smoke and discolor the white pigment. The annual consumption of anthracite coal on full operations is approximately 50,000 tons per year.

Joplin chat is used in the furnace charge as a fluxing agent to keep the molten material from running together and forming a solid mass. Approximately 25,000 tons of this material is used per year. There are other raw materials used in smaller quantities such as iron ore which is shipped in from Colorado, and various other points. The lead and zinc are obtained from many different sources. Some of it comes from the western states, some from Mexico, and considerable quantities from the tri-state district of Missouri, Kansas and Oklahoma.

The product of this operation is known as leaded zinc oxide pigment. It is a principal pigment for all outside paint formulations. This product is shipped in large quantities to paint factories in practically every state in the union, or exported to Canada, Mexico, and various other foreign countries. The annual output of this product is approximately 25,000 tons.

Addition in 1926

In 1926, the company decided to construct a zinc sulphate plant. This plant was put in operation in 1927 and has been in continuous operation since that time. Zinc sulphate is used in large quantities by the rayon and mining industries, agriculture and soil treatment, and in insecticides.

The basic raw materials for this product are zinc and sulphuric acid. The zinc ore is leached with sulphuric acid and water and after the zinc is in solution, purification reagents are added to remove practically all of the impurities, such as iron, nickel, cadmium, etc. This liquor is filtered through filter presses and is then put through a large rotary kiln under intense heat to drive off the excess water and solidify the zinc sulphate. After drying, the product is pulverized and packed for shipment.

This product is also shipped to practically every state in the union and also exported to various countries.

Large quantities of the zinc sulphate liquor also is used in the manufacture of another pigment—lithopone. Output of zinc sulphate plant is approximately 20,000 tons per year.

In 1930, the company decided to construct a plant for the manufacture of lithopone which is a white paint pigment used primarily for inside paint. The raw materials used in the manufacture of this product are principally barytes ore (barium sulphate), coal and zinc sulphate. A large proportion of the barytes ore used is bought in Missouri. The annual consumption of barytes ore in the lithopone plant is 25,000 to 30,000 tons per year. The barytes ore and coal are mixed together and burned in a tube furnace at high heat, the barium sulphate being reduced to water soluble barium sulphide. The zinc sulphate liquor is then added to the barium sulphide liquor, and after passing through a filtering, drying and calcining process, the end result is a white pigment.

Russia has a frigid climate, but under government domination its shoe factories put out only 220 million pairs of shoes a year, as against 473 million pairs in America. In Russia that is 1.04 pair of shoes a year for each person; in the United States 3.05 pairs.

#776

A Brief History of The Ozark Smelting & Mining Company's Activities From 1909 to 1944, inclusive

At the time of Mr. Padgett's writings on Ozark Smelting & Mining Company's history, R. V. Brown was the local superintendent, the plant, as an auxiliary was still young, having at the time only two blocks of oxide furnaces, and, during his incumbency the only expansion in manufacture being the installation of the Lime-Sulfur plant, technical guidance for which came from Mr. Holton at Cleveland.

In 1911 Mr. Brown was called to Chicago and the responsibility of management became the duty of Mr. W. E. Corts. For the next few years there followed a period of profitable expansion, both in the materials production and technical refinement in the leaded-zinc oxide department. Throughout the years and up to the present time the handling of the plant personnel, selection and allocations of men and labor problems in all departments of this auxiliary has been under the able guidance of one general foreman, Mr. R. F. Fitzpatrick.

Technical guidance has varied through these years and for the most part, been a responsibility of the superintendent in charge. Time and experience in the paint manufacturers field had established the necessity for low and controlled zinc sulfate content of our product, and, to make this possible, a washing and drying unit was built to maintain this control, operation beginning in 1912. This new unit was engineered by Mr. Macklind and fabricated through the supervision of Mr. Deck. The leaded-zinc oxide, washed and dried, continued to be an active department unit for several years, an additional dryer having been added in 1925, and, it was not until 1930 that other refinement in the pigment manufacture made it unnecessary to further operate.

The demand in the pigment trade for more and more of our excellent product, made it imperative that the factory be enlarged to satisfy the demand. Accordingly, Block "C" was built in 1915, and, to supply the necessary roasted ore for these additions, Cappeau kiln No. 1 was built and put into operation the following year. The multiple hearth McDougall kilns, inadequate in tonnage, costly to operate and quite old and expensively maintained, were dismantled and Cappeau No. 2 kiln built, operation beginning in 1918.

In 1916, a fire, unknown in origin, destroyed the Lime-Sulphur department. Subsequent production of this insecticide was established elsewhere in the East.

Throughout the years, the trend of the paint formulator was toward leaded-zinc oxide having appreciable amounts of basic lead sulfate, and, to satisfy these demands and to simultaneously reduce the formation of zinc sulfate in our product, a gradual evaluation of furnace design ensued.

Even before the erection of block "C", in 1915, the long, massive brick trails leading from the original furnace installations were dismantled, this to lessen the zinc sulfate produced, to more quickly dissipate the heat, to favor the formation of basic lead sulfate and to extend the operative period of the furnaces, which theretofore had been shortened by the erosive action of lead compounds on the brick work of the furnaces.

In 1915, when Block "C" was built, the combustion chamber was modified to a steel tower instead of the former massive brick work, and later when Block "D" was built, further refinements were instituted on Block "C", all for the final result to increase the basicity of the finished product, technically and to reduce operative and replacement costs, materially. With the ever increasing demand for our product, Block "D" was built in 1926, new in design and with individual furnace control. So well did it meet the needs in pigment quality, that the following year Block "C" was remodelled upon its lines; basicity was sure and controllable and the life of the furnaces extended indefinitely. Cappeau kilns No. 3 and No. 4 were also built in this year to meet the demands for more roasted ore for the extended output of finished oxide.

1928 ushered in a new period of Company development in heavy chemicals. Zinc sulfate is needed in the manufacture of Lithopone and it was in this year that operations began to supply the Chicago Lithopone factory and to be direct manufacturers to the insecticide and textile trades. This new addition to Coffeyville activities was supervised by Mr. Deeds, who in 1927 became the local superintendent, Mr. Corts having been called to the Chicago auxiliaries.

During Mr. Deeds guidance much was done in technical observation of leaded-zinc oxide manufacture and installation of scientific instruments for its control. Early in 1936 Mr. Deeds was transferred to Chicago, to be succeeded by Mr. Thomas who has held the superintendency to date.

In 1930 the Company found fit to transfer the manufacturing of lithopone to Coffeyville, thereby knitting closer the coordination of control of its raw materials to the finished pigment, under the direction of Mr. Saunders as a consultant and Mr. Pascal as superintendent of operative procedures. This management was uninterrupted until September of 1943 at which time Mr. Pascal was called to Cleveland and the Linseed Oil Auxiliary, and Mr Downs became superintendent of the lithopone plant. The lithopone plant here presented itself as a composite of all that could be had in modern design and economy. During its existence here, all the latest in pigment needs have been produced as well as supplementary products such as double strength lithopone and, in a small way, zinc sulfide. Many of the problems attending the exploration of these products were studied and procedures adopted thru the use of the pilot plant. The pilot plant still continues to be the forerunner of expanding interests of the Company into new fields; today the production of indium is under surveillance, tests and adaptions for a lucrative yield of this precious metal.

The production of cadmium metal, also, became a profitable by-product of the zinc sulfate department with the advent of lithopone manufacture here. It was also in 1930 that Block "A" was permanently discontinued as a manufacturing unit having become completely absolescent and unfit for rebuilding.

Expansion in all departments necessitated the installation of more roasting capacity of ores and to meet the needs, two Herreshoff

furnaces were installed in 1937, equipped in the most modern manner with Cottrell apparators for dust, minimizing nuisance to the country side and saving of metal values, otherwise lost.

In the early years of this auxiliary's activities, power was obtained through our own power plant but with ever increasing demands on power for the Company's expansion in products made, it became expedient in 1925 to buy electrical power from outside agencies, a setup which exists to this day.

The Ozark Smelting & Mining Co.
Magdalena, New Mexico

COPY

Smelter Department
Coffeyville, Kans.

December 28, 1935

Dec. 28
1899 — 36 YEARS IN SERVICE — Dec. 28
1935

PREFACE

Recently while rummaging through some of my old papers, I found the following diary, written from 1897 to 1909 inclusive, covering the history of what later became the present Ozark Smelting & Mining Co.

These notes have been misplaced for many years. For fear they might be lost again and inasmuch as I am the only one now with the Sherwin-Williams Company that started with the original Zinc Oxide Company -- the only one, therefore, that is in a position to write the early history of this business -- I shall endeavor to do so, thinking that perhaps it may be of interest to some who are now with the Company.

However, to keep the article from being too voluminous and due to the fact that this writer has been so closely identified with the progress of the business -- 1897 to 1909 , including its many "ups" and "downs" -- I feel there would be so many I's in the story that it would sound as though I were either very much conceited or merely trying to advertise myself; therefore, I am omitting many, many of the more or less interesting details.

From 1897 to 1935 is quite a span of years in anybody's language; nevertheless, this article brings back to my mind quite vividly the many things that have taken place as mentioned in the narrative.

It will be noticed that the narrative brings the story down only to 1909. However, it is my present intention to bring it on down to date at some future time. Just when depends largely on circumstances over which I have no control.

/s/ E. B. Padgett

EBP:rk

THE BEGINNING

In 1897 the writer was living in Howell Country, Missouri. This county is located in the south central part of the state. In the latter part of that year two men, James Forrester and Chris Byers moved to this section of the state, settling on and homesteading a quarter section --eighty acres each--of Government land. Being brothers-in law, with their land lying side by side, they more or less pooled their interests.

On this land there was a rather peculiar looking place, in this respect: on a spot of some four or five acres the surface was thickly covered with iron ore of a very peculiar formation. In fact, so peculiar that it was quite noticeable and created considerable comment among the natives. It so happened that Forrester and Byers were from the Joplin mining district and, therefore, knew something of and were more or less interested in the mining game.

After building their houses, getting settled down, etc., and hearing the natives' stories regarding the above-mentioned spot, they, too, became very much interested and after examining the place, decided to start prospecting for anything they might find.

After taking stock of their resources, however, they found they did not have sufficient funds to prospect to any appreciable extent; whereupon, they decided that one of them should go back to Joplin and try to get someone to finance the proposition. Byers finally made the trip and apparently had no trouble in getting a man with some money interested to the extent that he came back with him. After going over the property, the newcomer agreed to finance the project and finally made arrangements with Forrester and Byers to do the prospecting. After getting tools, etc., and getting them well started on the job, he returned to Joplin, agreeing to return in a short while and pay them for their labor.

After working some four or five weeks without receiving any pay or hearing anything further from their partner, Byers and Forrester suspended operations, as they had exhausted all their own meager resources and could not continue.

Unknown to them, however, they had already discovered ore, but, not being familiar with carbonate ores, they did not recognize it as such, since in the Joplin district they had mined only zinc blend and lead sulphide (galena). Nevertheless, the weight of the material told them, in a measure, that it had some value; therefore, they brought a sample of it down to the nearby Post Office one day when a Mr. W. F. Gordon happened to be there.

Mr. Gordon was prospecting another property some four or five miles northwest of the Forrester and Byers place; consequently, being more or less familiar with this type ore, he readily recognized its value and, inasmuch as Forrester and Byers' partner had never returned or paid them for their labor, Mr. Gordon, apparently, had a perfect right to bargain with them for the prospect. This he did, finally getting the

lease, including the prospect, for almost nothing. And the mine turned out to be a good producer, lasting several years and turning out thousands of tons of approximately 55% lead-free carbonate ore.

In short while the mine was developed to the extent that they were getting out quite a tonnage of ore. It was then that Mr. Gordon began looking around for a market and, after shopping around for some time, decided to sell to the New Jersey Zinc Company, located at Mineral Point, Wisconsin.

In eight or ten months this ore, owing to its low metal content, declined in price to the extent that it was no longer profitable to mine, considering the fact that the mine was twenty miles from a railroad and that it was necessary to haul the ore to this railroad by wagons over very poor roads at a cost of $2.50 per ton. So Mr. Gordon decided that, if he and his mine were to survive, it would be up to him to find some other means of disposing of his product. It was then he conceived the idea that it might be possible for him to make zinc oxide and, to prove his theory, he decided to build an experimental furnace.

This decision was reached after Mr. Gordon had made several trips to Mineral Point. The trips were made, ostensibly, to get the price of his ore ironed out. But, in fact, they were for the purpose of getting as much information as possible, together with a mental picture of the factory; and, in the meantime, through some hook or crook, he obtained a blue print of New Jersey's Mineral Point Plant. It later proved, however, to be a print of an old obsolete type furnace; nevertheless, it was of considerable value in building the factory. Soon after getting this information, blue prints, etc., he made a final decision to build the experimental furnace.

Right here is where this writer entered the picture on Dec. 28, 1899, at the grand wage of one dollar per day. The Company being badly in need of someone with some mechanical and engineering ability, and no one else, apparently, being available, I landed the job.

Mr. Gordon, in the meantime, had taken his brother-in-law, Frank Gregg, as a partner in the business; the Company, therefore, became known at this time as the G & G Mining Company.

This experimental furnace was a unique job, as follows:

Furnace was built of stone -- brick not being available. Mud was used for mortar.

The grates were taken from an old hand, ore jig.

The motive power was a so-called wheel road scraper, turned upside down, with a hole bored in one of its wheel spokes and a wooden peg inserted for a handle, which, of course, was rotated by hand--however, not by this writer.

The blast fan, which was the only fan used, was taken from a small water-well drilling rig, and the fan belt was run off the scraper wheel to the fan.

The pipe line was made of common 6-inch stove pipe, using muslin bags very similar to what we now use, only smaller and shorter.

Fuel was charcoal made on the ground.

There were no buildings --everything simply being out in the open.

Well, to make a long story short, a product was made that, by a long stretch of imagination, could perhaps be called zinc oxide, however, be that as it may, this was the beginning of the zinc oxide game for this company.

Immediately after this experimentation was completed, Gordon began looking around for enough financial backing to build a zinc oxide factory on a commercial basis and, strange to say, he succeeded and in a very short while, too. However, he was a "plenty" good salesman, and that's just what he was--a shoe salesman.

In August, 1900, ground was broken for this plant at West Plains, Missouri, a town of approximately 3,000 population, located on the Frisco Railroad, some 125 miles southeast of Springfield, Missouri.

At this time the writer was put on a salary of $40.00 per month -- working 12 hours per day, 365 days per year.

The title of the concern now was the G & G Zinc Oxide Company and it was a one-block job, using ore from Gordon's mine and coal from the Bernice Mine, Russellville, Ark. The factory did not have electric lights, instead, only lanterns and so-called miners' torches were used. Remember, this was a 24-hour-a-day plant.

The first carload of zinc oxide manufactured at this plant, suitable to be put on the market, was shipped to the Louisville Paint and Color Company, Louisville, Kentucky.

The capital for this plant was furnished by several local men, but it proved to be insufficient for the continuation of the business, considering the inexperience of everyone connected with the concern and the doubtful wisdom of the management. Therefore, after operating more or less periodically for some six or eight months, and with very poor success, it finally suspended operations for good -- everyone connected with the concern being practically "broke".

Nevertheless, Gordon's head was like an "angle worm", that is, working all the time, and in a short while he had found another "Angel," namely, the W. N. Matthews and Sons Company, a firm of brokers of St. Louis, Missouri, with considerable capital to back him in his new factory.

In August, 1901, ground was broken for the Joplin plant. The title of the concern was The Ozark Zinc Oxide Company. This plant was also a one-block job to start with, but in 1902-3 the second block was built. There were several changes made on the #1 block compared with the West Plains plant, especially in the baghouse distributing system and the pipe line.

The West Plains plant had the so-called New Jersey overhead type, distributing system--this was changed to our present type. The West Plains pipe line was also New Jersey's type; that is, a comparatively small round line with the exhaust fan located in its center, half way between furnace and baghouse, the line entering the baghouse at the top of the room instead of at the bottom, as it does now. As stated above, the distributing system being at the top of the room, it was necessary, of course, to fasten the bags on the system at the top instead of at the bottom. Just try to imagine anyone going to the top of the room, in the gas and heat, each and every time it was necessary to put on a new bag, or to rehang an old one.

The pipe line was changed to the so-called "Goose-Neck" type, patterned after the pipe line of the Picher Lead Smelter at Joplin. Mr. Gordon and Col. Bartlett, one of the big shots of the lead plant, were great friends and Mr. Bartlett rendered a lot of valuable assistance in shaping up this #1 block. The #2 furnace was equipped with a pipe line very similar to what we are now using; otherwise, the two blocks were identical except the ash pits.

The West Plains furnace and the #1 furnace at Joplin did not have ash pits suitable for putting water under the grates; consequently, the grates warped and burned out so badly that the replacement cost was one of the big items of expense. Averaging around 50 grates per block per month and with the grates costing approximately $10.00 each, it is very easy to see that this was the "neck of one of our "bottles". However, this did not seem to bother Mr. Gordon in the least, as he apparently took it for granted and let it go at that.

It was my thought, however, that something could and should be done about it and I so advised Mr. Gordon, explaining to him that inasmuch as the grates warped under heat without breaking, it was my opinion that they could be straightened in a like manner and that I had in mind making a rig that would get the job done at practically no cost, whatever, to the Company.

(If badly warped grates are not removed from the furnaces as soon as discovered, they will be completely destroyed, which will, in turn, cause a condition that is very detrimental to the grade and color of the finished product. This condition will also be the indirect cause of high unrecorded slag losses; therefore, it is imperative that the grate surface be kept as nearly flat and level as practical. And, obviously, this cannot be done with warped grates in the furnaces; hence, the important need of some method or means of straightening them, if and when they do warp.)

Notwithstanding my arguments and belief in the matter, all the satisfaction I received from several of these interviews was a "headache." In substance Mr. Gordon finally said for me never to mention this to him again, that he was too busy to be bothered with this sort of thing; besides it was a silly idea--and that anyone at all familiar with cast iron should know that our cast iron grates, once they warp, could never be made straight again in any circumstances.

Nevertheless, being just a green country lad and not knowing that the grates could not be straightened, I made the rig and straightened them!

However, with Gordon feeling as he did regarding this matter, I decided to wait until he was away on one of his periodical "sprees" - for which he somewhat was noted--before making the straightener. In a short while the expected happened and while he was away, I made the rig and had it working in good shape when he returned. To show how appreciative he was, although he saw the grates being straightened almost daily from that time on, he never was the man to acknowledge the straightener's worth or, in fact, to mention it to me in any way whatever. However, he was like that!

(In 1935 we are still using this type straightener and, obviously, its tangible, as well as intangible saving has been of inestimable value to the Company.)

When it came time to build the #2 block, it was my suggestion that, inasmuch as the grate cost had been so high on the other blocks, we make water-tight ash pits and try putting water under the grates in the hope that it could eliminate, at least, a part of this trouble and expense.

Mr. Gordon had the erroneous idea--and in this he was backed up by the Company's chemists—that any moisture put in the furnaceswas never entirely eliminated, and therefore, in the end was bound to wind up in the finished product. And, inasmuch as the SO_2 was already too high in the oxide (It was the general opinion of Mr. Gordon and the Company chemists that moisture originating in the furnaces was the indirect cause of SO_2 in the oxide)., he did not think it advisable to take any chances by putting water under the grates. For the same reason, water had never been put in the furnace charges.

Nevertheless, after several rather heated arguments, he finally consented to making the ash pits as suggested; however, very reluctantly.

When the block was completed and put in blast, water was put under the grates and, to Mr. Gordon's and the chemist's great surprise, the SO_2 did not increase in the oxide. This being the case, in a short while water was put in the furnaces charges, also, and still the SO_2 did not increase. So that argument was settled once and for all, as this was fairly conclusive proof that moisture in the furnaces had nothing whatever to do with SO_2 in the finished product.

Not only did water in the ash pits reduce the net grate loss at least 50%, but the addition of approximately 10% water to the charges made an even greater saving, in that the charges burned much better which, in turn, lowered the metal content of the slag and made for greater production.

(In order to keep the story within certain brief limits, there is room here for only the few aforementioned changes and improvements; they are more or less typical, however, of numerous incidents that were continuously coming up, especially, in the earlier days of this business.)

(Perhaps it will not be out of place for me to say that up the year, 1904, there had been no one connected with the Company who had had any previous training or experience in the manufacture of zinc oxide. It was quite obvious, therefore, that practically everything we were doing was by trial and error methods and, without any precedent to go by whatever, it goes without saying that the "hits" were few and far between compared with the "errors". While the school of experience may charge high tuition, nevertheless, in the circumstances, if we were to progress, there was no other way for us to learn!)

When #2 block was finished, a small generator was installed and, for the first time, we had electric lights.

This plant was operated on ore from Gordon's mine and what carbonate and silicate that could be picked up in the Joplin district, using Arkansas coal from the Russellville and North Spadra fields.

The factory did not have much luck as a money-maker, in fact, just about the same as its predecessor, the West Plains plant. Its financial backers, however, were considerably stronger and, therefore, it lasted longer. But, apparently, any well can be pumped dry if it is pumped fast enough and long enough --and that's just what happened here.

So, after worrying along, apparently going from bad to worse for some two or two and a half years and practically breaking his backers, Mr. Gordon sold the plant to the Sherwin-Williams Paint Company who retained him as manager, but send down a man by the name of H. E. Galloway as assistant manager.

When the Sherwin-Williams Company purchased and assumed control of the business, it was placed under the general management of Mr. C. A. Martin, whose headquarters were in Cleveland, Ohio, the home office of the parent company.

(Mr. Martin impressed one at the time, 1904, as being an outstanding, high-type, shrewd, and capable business man — a great leader with a commanding personality.

Obviously, one of the factory's great needs at the moment was an experienced and capable local manager with the ability to build up an operating organization that could and would make the most of what we had to work with. It was my opinion that, with Mr. Martin in control, the Company's interests were in good hands and that, in the end, this matter would be well taken care of.)

The writer at this time being Stationary Engineer, Master-Mechanic, Superintendent of Construction, and what-have-you, at the fine salary of $75.00 per month, was still working 12 hours per day 365 days per year, with no thought of a vacation.

Mr. Galloway, in my opinion, was a fairly capable man and one of the finest fellows to meet personally, that it has never been my pleasure to come in contact with. Nevertheless, he made what proved to be - for him - a serious mistake, in this way: he "fell" for Mr. Gordon, instead of getting in the game and making at least an effort to get the organization together, for a "blind-man" should have been able to see that this was one of the factory's greatest needs.

In my opinion, Mr. Gordon was purely a salesman and promoter; nevertheless, he deserves no small amount of credit for his vision - together with his initiative and ability to interest those financially able and willing to back him - practically an unknown - to the extent that he was able to build and, after a fashion, operate three zinc oxide factories.

As an operating manager, however, it was obvious that he was entirely out of his elements. Apparently, his very nature rebelled against the ordinary routine of factory operation. Consequently, in lining-up with him, it was also quite clear that Mr. Galloway jockeyed himself into an untenable position with the Company and my guess was, at the time, that, in the not too distant future, it would be just too bad for him.

Among many other things, the Joplin plant, with only five acres of land and no more available, was very poorly located; that is, right down in a gulch some two miles east of Main Street on what would be East Eleventh, if this street were extended. Therefore, everything considered, the idea of building this plant any larger was entirely considered, the idea of building this plant any larger was entirely out of the question.

This being the case the Company decided to build a new factory, and Coffeyville, Kansas, was selected as the place to build. No doubt, this decision was made, almost solely, from the fact that Coffeyville and its surrounding territory, at the time, was supposed to have practically an unlimited and everlasting supply of natural gas. The Company obtained a very advantageous gas contract; that is, 5¢ per thousand feet for the first five years and 5¢ per M for the next five years. As stated above, with everyone in these parts, including Mr. Gordon, being of the opinion that the supply was unlimited and inexhaustible, there was no thought that the price of this commodity would ever go much higher; consequently, Mr. Gordon did not consider it worth while to obtain a longer contract.

This fuel advantage, together with the fact that the available supply of carbonate and silicate ores was getting inadequate for the Company's needs, made it necessary that they use more or less sulphide

ores and, before this type ore could be used, it was necessary that it be de-sulphured (roasted). To do this and meet competition, it was very imperative that the Company have a good and sufficient supply of cheap gas; ence, the decision to build at Coffeyville. And in August, 1905, ground was broken for the Coffeyville plant.

The writer came to Coffeyville January 6, 1906. There certainly was a lot of activity in and around this town at the time and, "believe it or not," there seemingly was more and deeper mud here than any place in the world - bar none. It was so deep at the smelter grounds that it was necessary for everyone to wear rubber boots in order to get around. In fact in my opinion, everything considered, this was a "helluva town" — only two automobiles here; there was very little use for them, however, as there were no roads suitable to drive them on and no pavements, except the Plaza block, and very little sidewalk - just mud everywhere and plenty of it.

Mr. Gordon came over here as manager, but I never knew what finally became of Mr. Galloway, as I never saw him again after I left Joplin.

The title of the business was changed at this time to The Ozark Smelting and Mining Co.

"A" block was completed along about the middle of 1906 and put in blast immediately. Erection was started on "B" in the latter part of 1906 or early part of 1907. It was, however, just the same old story — poor organization, no system. So, along about this time, a "new man came to town - and to the smelter - by name, H. J. Hain, and "you can take it from me," it didn't take him very long to find out the true situation; that is, that Mr. Gordon, among many other things, was apparently incapable of building up an organization that could get the job done.

Consequently, in a short while, Gordon did the "fadeout" and Mr. Hain was the new manager. While Mr. Hain was comparatively a young man, he certainly knew how to "get organized" and, judging from the way he handled the situation here, it was quite evident that he was not lacking in experience along that line - and, be it ever remembered, "Experience can not be purchased and it has no correspondence course."

Mr. Hain was also a tireless worker, always on the job, early and late, lending his aid and assistance at all times. This fact, together with his apparent ability to pick capable men, soon enabled him to have the factory on a fairly smooth operating basis.

One of the "thorns" in Mr. Hain's side however, was the fact that Gordon was still living in Coffeyville, at least temporarily, and causing more or less trouble b telling the workmen, when they were up town, that he would soon have another company organized and would build a new factory and give them all better jobs. And, owing to the fact that he had quite a reputation for doing this - building factories, his talk carried considerable weight which, in turn, caused no small amount of discontent among the workmen.

In fact, there were very few loyal men on the plan for some little time -- caused, no doubt, largely by the aforementioned incidents, Nevertheless, Mr. Hain soon began to "weed-out" the most disloyal ones and to impress on the others that it was either "get in the game and be loyal to him and the Company," or "Get the hell out." Consequently, after a few of the "ringleaders" were pitched out on their ears, this trouble was over, which obviously was a great relief to Mr. Hain.

We were also having, among many other troubles, all kinds of grief with the furnaces -- in this way: they were burning out about every four or five months because Mr. Gordon had a "yen" for running them too hot, which Mr. Hain insisted, almost from the time he came on the job, was, in his opinion, unnecessary.

As soon as Mr. Hain got the organization lined up and pulling together, he began lowering the heat on the furnaces and, as he surmised, this did not decrease production or increase the metal content of the slag. In fact, with some mechanical changes, together with some few changes in operation including more intelligent supervision, production was greatly increased, grade and color of oxide improved and, last but not least, slags lowered.

(While on the slag subject, I will mention what every successful manufacturer of zinc oxide knows; that is, high and low slags spell the difference between success and failure in this business.)

With reduced heat and improved operation, the furnaces were not showing any of their old-time distress; therefore, were lasting much longer than they had in the past. This change was a great saving in money, besides making the furnaces much easier to operate.

After the above had been accomplished, Mr. Hain conceived the idea of a mechanical mixer to mix the furnace charges. The charges had always been mixed by hand - a job which, it goes without saying, was "man-killing" and very crude. However, Mr. Brown, the Ozarks chief chemist and supposed-to-be technical advisor, whom I shall mention again later, did not agree with Mr. Hain's idea, saying it was not practical. Besides, it was Mr. Brown's opinion that the charges would not be as well mixed as they were by hand, etc., etc.

Nevertheless, and to his credit, Mr. Hain, apparently, paid very little attention to Brown's opinion or objections, especially in this instance. With the help of the writer, the mixer was finally installed and, "believe you me", it was a huge success from the beginning.

Notwithstanding Mr. Brown's opinion that a mechanical mixer would not be practical and would, therefore, be a waste of the Company's money, it was, as stated above, a huge success, saving the Company a great amount of money besides greatly simplifying the furnace operations.

(These mentioned changes and improvements were only a few of the many inaugurated by Mr. Hain. However, as stated before, in order to keep the story as brief as possible, I will not go into further details at this time.)

But regardless of changes and improved conditions, there was still plenty of grief in and around the factory for sometime. In spite of the fact that Mr. Hain is, in my opinion, one of the best judges of men and affairs that it has ever been my pleasure to be associated with, it takes time to build up a capable operating organization.

Within the year, however, he had worked wonders along this line and, as mentioned, the factory was showing the effects of his guiding hand by its smoother and more business-like operations and, for the first time in its history, it began to show signs of being on a paying basis.

In the meantime, the Company had sent down a Mr. R. V. Brown as chief chemist or sort of technical advisor and incidentally to learn the business under Mr. Hain's guidance with the view in mind, no doubt, of replacing Mr. Hain when Mr. Brown had become thoroughly familiar with the business.

I mean by "replacing" Mr. Hain that the Company obviously was recognizing his capability by promoting him to a bigger and better position. Considering the Ozark's miserably poor showing ~~pire~~ prior to his management, the fact that he had put the factory on its "feet" and, incidentally, on a paying basis after it had been "flat on its back" for years, certainly justified that confidence.

So, in the latter part of 1909, Mr. Hain was promoted to the General Superintendency of Manufacturing of the entire Sherwin-Williams Company, including Canadian factories, with headquarters in Cleveland - and Mr. Brown was the Ozark's new Superintent.

"1897 to 1909, inclusive"

E. B. Padgett
/s/